



Figure 5-4



Figure 5-5



Figure 5-6



Figure 5-7



Figure 5-8



Figure 5-9

be notified at once. Construction will proceed in the area of question only after SHPO review and approval.

5.5 Electrical Effects

5.5.1 Facility Noise Emissions

The major noise sources associated with the proposed substation facility are expected to be the two transformers proposed for the substation. Noise modeling has been conducted to predict the environmental noise emissions from the proposed substation facility. The facility noise emissions have been evaluated based on meeting the town's regulations and reducing the noise impact on nearby residences. Noise mitigation measures were considered and selected to assure compliance with the regulations and reduce the facility noise at the nearest noise sensitive receptors. With noise mitigation, the facility noise emissions will comply with the Town of Trumbull regulations (45 dBA nighttime) and only slightly increase the background sound levels at the nearest residences during the quietest nighttime hours. During other daytime hours, the facility noise emissions will cause no increase to the background sound levels at the nearest residences.

With noise mitigation applied to the power transformers, the facility noise emissions are expected to comply with the local regulations and only slightly increase the background sound levels at the nearest residences. As previously stated, the existing noise levels at the nearest residential boundaries ranged from 48 to 50 dBA. The net result of installing the new transformers with appropriate mitigation is that it will increase the existing background sound level by only 0 - 2 dBA. A 3 dB change is considered "just barely perceptible to the average listener". Therefore, a 0 to 2 dB increase due to the substation would be considered insignificant.

5.5.2 Electric and Magnetic Fields

The design of the proposed substation is consistent with the Connecticut Siting Council's Best Management Practices for electric and magnetic fields. The Company's actions include:

- Recognition of completed and ongoing scientific EMF research.
- Performance of an individual project-specific assessment of EMF.
- Obtaining baseline, preconstruction measurements of EMF levels at the proposed site.
- Consideration of EMF exposure levels and durations with respect to existing and planned uses.

- Consideration of reduced EMF design (optimal phasing of the 115 kV transmission lines).
- Consideration of non-structural alternatives.
- Consideration of project-specific exposure limits for EMF.

Operation of the proposed Trumbull Substation will not significantly increase the magnetic field within the UI property outside of the substation fence line, and may only slightly increase the magnetic field levels at portions of UI's property line. Therefore, UI does not recommend establishing a project-specific electric and magnetic field standard for this facility. The design for the Trumbull Substation will have lower associated EMF levels than exposure guidelines provided by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the American Conference on Governmental Industrial Hygienists (ACGIH). UI believes that Project is consistent with the Council's Best Management Practices for Electric and Magnetic Fields, and that no additional design aspects specifically to reduce EMF needed to be considered.

Ambient EMF measurements and projected calculations were made at the proposed substation's eastern property line where the existing UI 115 kV transmission lines pass overhead. The highest EMF values will occur where the existing transmission lines enter the new substation. At this location, the existing electric field was measured at 0.5 kV/m and the existing magnetic field was measured at 71 mG. At the same location with the substation in operation, the calculated electric field is 0.8 kV/m and the calculated magnetic field is 97 mG.

6.0 Permits and Approvals

The Trumbull Substation project will comply with all applicable local, state and federal laws, regulations, codes, ordinances, and similar requirements concerning noise, excavation and construction activities. Permit applications, if required, will be submitted and permits will be secured for the proposed substation facilities, including the associated transmission line modification. Specific permits/agency approvals are summarized in the following sections.

6.1 Connecticut Siting Council

UI will make application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the Trumbull Substation Project. Prior to the filing of this application, UI will notify the property owners adjacent to the proposed substation site of the planned construction and operation of the proposed substation and the transmission line modification. Notification will be by certified letter. At least 60 days prior to the application filing, UI will also formally provide information to the Town of Trumbull and other incorporated jurisdictions within 2,500 feet of the project (the City of Bridgeport and the Town of Stratford) regarding the proposed project. Consistent with statutory requirements, UI will seek to meet with the chief elected officials or their designees to consult with them on this project.

6.2 Department of Public Utility Control

At least 30 days prior to the start of construction of the proposed substation and transmission line modification, UI will submit to the Connecticut Department of Public Utility Control (DPUC) the following:

- A map indicating the location of the proposed substation and the associated transmission line modification. The map will show the points where the transmission line will be routed into and through the new substation.
- Copies of letters from other utilities that may be affected by the project, stating that they have been notified of the details of the proposed substation and transmission line connection and that they offer no objection to the method or manner of construction.

Although no formal petition to the DPUC is required with respect to the proposed substation facility, UI will submit to the DPUC staff technical plans for the new substation for the DPUC's review and comment. UI will submit this information to the DPUC prior to the start of construction.

6.3 Commissioner of Transportation

The proposed substation and transmission line modification will be constructed adjacent to the entry/exit ramps of the Connecticut State Route 8/Nichols Avenue (State Route 108) interchange. Written notification to the State Commissioner of Transportation and the Connecticut Department of Transportation will be filed as part of the project.

6.4 Department of Environmental Protection

If the project requires the discharge of groundwater from foundation excavation dewatering operations, a permit will be obtained from the Connecticut Department of Environmental Protection (DEP), Bureau of Water Management.

6.5 Local Permits

The Trumbull Substation Project will require various local permits and approvals from the Town of Trumbull. Following are those permits and approvals anticipated for the project:

- Building Permit for the construction of the proposed control/switchgear building at the substation.
- Cut and Fill Permit.
- Engineering Permit for driveway construction and curb repair.
- Permit for sanitary holding tank or septic system.
- Review and written approval of erosion and sediment control measures for stormwater management pursuant to the Connecticut DEP General Permit for the discharge of stormwater associated with construction activities affecting more than one acre but less than five acres of land area.

6.6 ISO New England

UI has notified the Regional Transmission Organization (RTO) ISO New England (ISO-NE) of the proposed substation addition to its system. Additional notification in the form of technical information on the proposed substation, its location, and the transmission line modification to connect the substation to the UI transmission grid will be required.

7.0 Consultation and Coordination with Others

The following agencies and individuals were contacted and/or provided information during the environmental analysis and preparation of this Environmental Report for United Illuminating's Trumbull Substation Project.

Federal

U. S. Department of Agriculture

Natural Resources Conservation Service

Staff Contact

U. S. Department of Defense

Army Corps of Engineers, New England District

Ruth Ladd

U. S. Department of the Interior

Fish and Wildlife Service

Michael J. Amaral
Phil Morrison

State of Connecticut

Commission on Culture & Tourism

J. Paul Loether

Department of Environmental Protection

Coastal Zone Management

Robert Hannon

Inland Wetlands and Watercourses

Staff Contact

Permitting Administrator

Bea Milne

Stormwater Management

Chris Stone

Wildlife

Staff Contact

Department of Transportation

Policy and Planning

James R. Andrini

Historical Commission

John W. Shannahan

Local

Greater Bridgeport Regional Planning Agency

Executive Director

James T. Wang

Town of Trumbull

Engineering

Brian E. Smith

First Selectman

Raymond G. Baldwin

Planning and Zoning

Harry Eberhart
Joan Gruce

8.0 Pertinent Correspondence

During the course of the preparation of this Environmental Report (ER) for United Illuminating's Trumbull Substation Project, a number of different agencies and individuals were contacted regarding the project (Section 7.0). These contacts served to request detailed environmental information on the proposed substation site and the project area, and also to inform the agencies of the planned project. Some information needed to prepare this ER was gathered from these agencies, as were comments and concerns of agency representatives. While much information has been gathered from agency Internet web sites and from telephone contacts and meetings with individuals, formal letters were sent to the U. S. Fish and Wildlife Service, Connecticut Department of Environmental Protection (Wildlife Division and Permitting Administrator), and the Connecticut Historical Commission in September 2002. These agencies were contacted again in April 2005.

The following written responses have been received by the project. If other written responses are received, copies will be forwarded to the Siting Council for filing with this application.

- Connecticut Commission on Culture & Tourism
Deputy State Historic Preservation Officer
Re: Historic and Archaeological Sites and other Cultural Resources
- Connecticut Historical Commission
State Historic Preservation Officer
Re: Historic and Archaeological Sites and other Cultural Resources
- U. S. Department of the Interior
Fish and Wildlife Service
Re: Threatened and Endangered Species

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Appendix A

Aerial Photograph



te: 2001 (estimated)

Black & Veatch

Trumbull Junction Substation Project

The United Illuminating Company

AERIAL PHOTOGRAPH